

REMARKS

Upon entry of this amendment, claims 1-20 are pending in the application.

Claims 1-20 are objected to because of some informalities.

Claims 2, 4, 6, 8, 10, 12, 13-19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al (U.S. Patent no. 5,839,187).

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al in view of Schindler (U.S. Patent no. 6,185,815) .

Claims 3-12 and 15-20 would be allowable if rewritten to overcome the objection and the rejections under 35 U.S.C. 112, second paragraph and to include all of the limitations of the base claim and any intervening claims.

Claim Objections and the 35 U.S.C. §112 Rejection

Claims 1-20 have been amended to eliminate the informalities and to overcome the rejections. It is respectfully submitted that the amended claims all satisfy the statutory requirements.

The 35 U.S.C. §102(b) Rejection

Claim 1 stands is rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Sato et al (U.S. Patent no. 5,839,187). The rejection is traversed and reconsideration is respectfully requested.

Claim 1 concerns an apparatus for placing a semiconductor chip as a flip chip on a substrate, the apparatus comprising a flip device which Applicant regards novel and inventive. The flip device is formed as a parallelogram construction having a support bracket, a first and a second swivel arm and a connecting arm, a chip gripper arranged on the connecting arm and a drive system for the back and forth movement of the parallelogram construction between a first limit position where the chip gripper accepts the semiconductor chip and a second limit position where the chip gripper places the semiconductor chip on the substrate. The function of the swivel arms consists in that they enable the parallelogram construction to rotate as illustrated in figures 4 and 5 and explained in detail with reference to figures 3A to 3C. The meaning of "swivel" is "turn", "rotate", "pivot": the swivel arms can rotate around the axis A2 and A3, respectively.

The apparatus of Sato comprises a first frame 22 and a second frame 23. The frames 22 and 23 are secured to the frames 1a. The frames 22 and 23 form part of a structure which allows a transferring head 31 to move in x and y direction. In contrast to the present invention the frames 22 and 23 of Sato are fixed and cannot rotate. Furthermore the frames 22 and 23 are not related to the flip device 70. The flip device of Sato is shown as head 70 in fig. 4. Column 6, lines 13-41 disclose that *"the motor 57 is driven to move the head 70 which is to pick up the flip chip P to the pickup station A"* and *"the motor 57 is then driven to horizontally turn the head 70*

*by 180 degrees from the pickup station A and also to vertically invert it." "Next the flip chip P is picked up by the nozzle 35 of the transferring head 31."... "The transferring head 31 moves to the flux applicator to apply flux to the bump and mounts the bump of the flip chip on an electrode of a substrate."* It is clear from the description and the drawings that the head 70 of Sato which is used to vertically invert the flip chip and the frames 22 and 23 which serve as guide elements for the transferring head 31 are in no way related to each other.

The parallelogram construction of the present invention consists of a support bracket, the first and the second swivel arm and a connecting arm. The connecting arm runs parallel to the support bracket and the chip gripper is arranged on the connecting arm. For an anticipation rejection to be appropriate, each and every element or limitation in a rejected claim must be disclosed in a single prior art reference used in the claim rejection. Applicant maintains that Sato's frames 22 and 23 are not linked together or otherwise structurally combined to form a parallelogram construction as claimed in claim 1. Accordingly, it cannot be maintained that Sato anticipates claim 1.

#### The 35 U.S.C. §103(a) Rejections

Claims 13 and 14 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Sato et al. The rejection is traversed and reconsideration is respectfully requested.

Because claims 13 and 14 each depend from claim 1 and thereby incorporate the limitations of claim 1, Sato does not anticipate claims 13 and 14 for at least the reasons set forth above in the section 102 discussion related to claim 1.

Claim 2 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Sato et al in view of Schindler (U.S. Patent no. 6,185,815) . The rejection is traversed and reconsideration is respectfully requested.

Because claim 2 depends from claim 1 and thereby incorporates the limitations of claim 1, Sato in view of Schindler does not render obvious claim 2 for at least the reasons set forth in the discussion above.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Request for Allowance


As each of the Examiner's rejections have been addressed herein, early favorable consideration of this Amendment is earnestly solicited and Applicant requests that the Examiner enter this amendment and pass claims 1-20 to issue.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below. Please charge any additional required fee or credit any overpayment to our deposit

account number 50-1698.

Respectfully submitted,  
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